

JOHNSON (J. G.)

WITH THE COMPLIMENTS OF THE AUTHOR.

POISONING
BY
CANNED GOODS.

[Reprint from the *Medico-Legal Journal*]

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BY JOHN G. JOHNSON, M.D.,

OF BROOKLYN, N. Y.

SURGEON TO THE UNION FERRY Co.

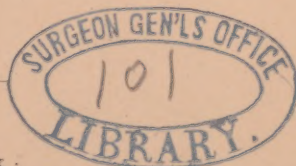
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POISONING BY CANNED GOODS.*

By JOHN G JOHNSON, M.D. of Brooklyn, N. Y.

HAVING had in my practice six cases of corrosive poisoning from eating canned tomatoes—finding that none of our works on toxicology gave any information on the dangers of canned goods, and none of the medical works accessible furnished anything to guide the physician on this subject—after consulting the chemist and former chemist of the Board of Health of Brooklyn, and gaining no information from them, it was thought proper that the matter should be brought before this Society, from which has emanated so many laws beneficial to the community; that by means of the advice, obtained from the eminent lawyers, physicians and chemists composing your body, such knowledge should be secured as will be of service to physicians in the future, should similar cases unfortunately occur in their practice, and necessary legislation be obtained, if that be deemed advisable, to prevent these dangers hereafter. Cases of severe sickness have been reported from time to time in various parts of this country from eating canned food. I know of none of these that have been thoroughly sifted so as to place the matter in reliable form before those competent to judge of a matter so important to the community as its food supply.

While there is no doubt that the preservation of food in

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hermetically sealed cans has added much to the health and comfort of the public, still it is no less certain that unscrupulous tradesmen have dealt in damaged, unsound and unwholesome canned food, and that serious sickness has occurred therefrom, both in this country and abroad, till public confidence has been shaken, and a large portion of the community look with doubt and distrust upon all food thus preserved. That this suspicion is not without foundation is shown by the fact that *The Trade*, a newspaper published in the canning interest in Baltimore, gives, in a single issue, the names of fifty-seven firms that deal only in "seconds," or doubtful goods, as a warning to retail grocers not to purchase of them.

To still further aid in elucidating this question, I have, through the kindness of your President, been allowed to invite representative men from the canned goods trade to present their views to you upon this subject, so that this body should have information from their standpoint to aid in the forming of such opinions as may be deemed best upon this important question.

The history of the cases, briefly, is this: On Thursday, March 6th, 1884, the family of Mr. K. sat down to a lunch, consisting of bread and butter and canned tomatoes. The family consisted of Mrs. K., the mother; Theodora, aged 22; Grace, aged 18; John, aged 13, and Osceola, aged 10. A nephew happening to call at that time also sat down to lunch with them. Mr. K. was not home to lunch. The family are strong, hale and vigorous, with whose constitution and habits I have been acquainted, having attended the family for over twenty years. They all sat down to the table in perfect health. About two hours after the lunch they were all taken

with burning pain in the pit of the stomach, intense thirst, dryness of the throat, retching and tenesmus. These symptoms increasing, at supper time none were able to be at the table. Mrs. K., thinking that they were suffering from some indigestible food, gave them all a cathartic.

The boys, after some hours, were able to throw off the contents of their stomach, but lay around stupid and cross, and complaining of the pains in their abdomen, while the symptoms in the mother's case and the daughters' continued to increase; and the mother, finding that laxatives and anodynes had no effect, sent for me on the morning of the 10th. At this time Theodora's case had become alarming; there was a severe gastro enteritis; the abdomen intensely tender; the tongue of a fiery red; the tenesmus so severe that the bowel would turn inside out, like the finger of a glove, with the severity of the bearing down in the ineffectual efforts to pass the contents of the bowel. She was beginning to sink into a coma, aroused only by the severity of her pains.

The mother was suffering with the same symptoms, and the daughter Grace had, in addition, an eruption from head to foot, of a fiery red, with intolerable itching, and her skin, which is naturally soft and smooth, was as rough as a nutmeg grater. This stupor passed into a coma so profound that I could not arouse her by any means at hand. Even taking hold of the small hair in front of the upper portion of the ear, and lifting the head from the pillow, would not cause even a quivering of the eyelids. In the evening of Friday, the 14th, she was taken with epileptiform convulsions, so severe and continuous, that I instinctively looked to see if there was a crape on the door each time I drove up to the house. These convulsions continued with increasing severity

till Sunday afternoon, when her bowels began to move—when a dark, tarry black fluid substance passed from her at stool. On this being allowed to stand, on the top was seen, floating, a glistening fluid, which showed rainbow colors, like oil on the waters. As the Board of Health had the cases under observation, I directed all evacuations to be kept for their chemist, and this was done, but unfortunately he made no chemical examination.

During all the time that she was in this coma and convulsions, she lay in a drenching colliquative sweat, with thin, thready pulse. After the dark, tarry movements there were bloody stools, not the small, teasing, straining stools with mucus and blood of dysentery, but hemorrhages, of quite a large amount, mingled with this tarry matter. As the coma passed off, it was found that there was an impairment of nerve power in the left arm, which gradually subsided, with the exception of the muscles controlled by the ulna nerve. There were no marks or bruises on the arm and no indication of any straining of the joints from the convulsions. And this paralysis of the left arm was attributed to the effects of the poison. A swelling, localized, the size of the fist, in the left iliac fossa, made its appearance, and it was feared that an adhesive peritonitis, with perforation of the intestine and foecal abscess, would form, but fortunately that has subsided to a large degree, and the probability is that it will cause no further trouble.

As the symptoms of the others were similar, varying only in intensity, I will not detain you with the repetition. During the early part of the sickness she drank largely of milk to quench the intolerable thirst, but that was evidently healthy, as the same milk was served by the same milkman to neigh-

bors, and careful inquiry failed to show that it had disagreed with any.

That they were suffering from some irritant poison was evident from the fact that they all sat down to lunch in perfect health, and all that partook of the lunch were sickened by it. That lunch was bread and butter and canned tomatoes. That it was not caused by the bread and butter was shown from the fact that the husband had eaten of the bread and butter at breakfast and also at supper, and had no trouble. He had not been home to lunch; also a lady who came in to help them had taken of the bread and butter for her tea and had no trouble, while the nephew, who had only taken one meal at the house, and that was this lunch, had suffered severely from the colic, cramps, dizziness and stupor, and was, after some hours, relieved by vomiting, but his pains continued in the abdomen for several days. This limited the poison to the tomatoes. Could it have resulted from spoiled tomatoes? No! why not? because the sickness resulting from that would have been simply cholera morbus, vomiting, purging and cramps. That would not produce vertigo, coma, convulsions and obstinate constipation. Having for many years attended those in the wholesale grocery business, I know something of the method of preparing tomatoes. After the food is placed in the cans and the cap soldered on, the goods are processed. That is, put into a steam bath—the temperature is raised to 240 degs. to 250 degs. Far.—and kept there till a pressure of 25 lbs. to the square inch is created in the can. The attendant then thrusts an awl through the hole previously marked in the centre of the cap. The gases blow out of the can. The can is then soldered, while hot. As the can becomes cold the heads bulge in and stay bulged in.

Now, if decomposition begins, the heads of the can bulge out. The gasses that form inside of the can distend and force out the heads. In the language of the trade such cans are "swells." It was a well known trick of unscrupulous dealers to go round to the wholesale trade and buy swells—by heating and punching another hole or reprocessing, as it is termed by canners, the gases would escape and then the heads would assume their concave form again; but cans, thus treated, would have *two solder holes* instead of one. I examined the can in question; it had only one solder hole. I went through all the cans in the two crates of these tomatoes left in the grocer's, and none had more than one solder hole, and none were swells. Even if the tomatoes had begun to spoil she had them cooked, and cooking would have cured them. Every housewife knows that if her preserves begin to sour, cooking prevents the souring. The reason may not be so generally known. The yeast plant and all ferments are killed by heat. These ferments and all low forms of organization like bacteria, multiply by division. To illustrate, if a chain should break up into separate links, and each separate link grow to make a new chain, and these new chains break up into separate links to again grow and make new chains, this would give you a good idea of the growth of these ferments—so with these ferments little buds form on the parent stalk, these fall off and grow, and make new stalks for new buds to grow on. Putrefaction and decay, instead of being death, is really giving birth to myriads of little living plants, whose food they furnish. Every decaying apple or banana or tomatoe, every muddy pool in your streets, every damp spot in your houses is swarming with these tiny scavengers. They dry up and become spores and

are blown around in the air, and if they light on anything capable of furnishing food they multiply with wonderful rapidity. Now, heat kills all these ; why does your housewife keep her milk in a cold place ? because cold prevents these ferments from growing. Why does she scald the milk if it threatens to sour ? because heat kills these ferments. If she puts the dough in too cold a place it will not rise, why ? because the yeast ferments will not grow ; if she puts it into too hot a place it will sour ; why, because they multiply so rapidly that they devour all the saccharine matter in the flour, and destructive fermentation has taken place. Now, heat kills all these ferments, and if the tomatoes had commenced to decay, the heating would have destroyed that danger. It was not spoiled tomatoes. Could the poison have come from the utensils used ? They were cooked in a stone crock. That is made of fire clay, with a salt glaze. It was for over a month in use and the family were cleanly. The crock was examined by Dr. Bartley, the Chemist of the Board of Health ; by Mr. F. N. Barrett, Editor of the *Grocer*, the leading paper of the canning interest, and myself—all agreed it could not be that. Could it be from the spoon used in stirring ? this was tripple plated, unworn, and clean.

That it came from the tomatoes and that the poison was in solution, was shown from the fact, that the oldest daughter had soaked her bread in the sop or liquid portion, and she suffered the most severely ; she had not eaten of any of the tomatoes. The mother had also soaked her bread in the sop, but not liking the taste of it, she had not eaten much of it. She suffered next in severity. The second daughter had eaten the soft part, or "catsup part," as she

called it. Her symptoms were next in severity to the mother's—while the boys and the nephew, who had partaken of the solid part, had got off the easiest, having had simply the severe cramps, colic, and finally vomited and laid round stupid that afternoon and evening, and in two or three days the pains in the abdomen were gone and they were at their play.

The first impression would be that it was lead, from the well-known effects of acid on lead, and the fact that lumps of solder are often found in cans as well as the solder that is used in making the joints. The red tongue, the severe colic, the thirst and obstinate constipation looked like lead, but as the cases progressed, and we had the stupor, coma, colliquative sweats, and severe and continuous convulsions, it required some other poison besides lead to account for these. It was something more than an irritant. It was evident that they were suffering from some corrosive poison. What could it be? This is an extremely difficult question to determine—as admitted by all authorities on poison—when you have none of the original material to analyze. The length of time the poison might have been in the diluting mixture might also modify the usual symptoms. The fact that the mouths, tongues and throats were not sore or excoriated, showed that the poison must have been in a diluted state, or it would have been noticed in the burning sensation, produced in the mouth, and the first one who partook of it would have warned the rest. Nothing could be gained by the history from the family in regard to the smell of what had been vomited, or the color or appearance to guide. The only statement was that the tomatoes tasted flat, and the addition of salt and pepper did not bring up

the taste, and the color of the tomatoes looked like a faded red. The mother did not pay much attention to the color, because she thought that was because the yellow and red tomatoes being stewed in the same kettle. The symptoms corresponded more nearly with verdigris poisoning, or the acetate of copper, and this seemed the probable cause, as it was a well-known fact that in these canning establishments large copper kettles are used, and verdigris frequently forms on these when acid fruits are stewed and allowed to stand. The kettles used in many of these establishments were known to be copper, and untinned and unprotected in any way from the action of acids.

Naunyn, in Ziemssen, Vol. XVII., p. 590, reports that in the Vienna General Hospital there were 130 cases of poisoning, produced in this way, that is, by boiling or preserving food in copper kettles, nine of which proved fatal. He also says all of these poisonings may become dangerous to life even when the amount of copper is not large enough to be clearly perceived by the taste. The symptoms laid down as resulting from verdigris poisoning are those of a severe gastro enteritis, the existence of great tenesmus, and pains in the large intestine. In comparative many cases the nervous centres sympathize in a very large degree, as shown by the violent delirium, etc. Convulsions are not unfrequently observed. These symptoms are, however, noticed chiefly in those cases of copper poisoning caused by food in which the diagnosis is not perfectly clear. It was noticed that the tin was eroded from the head of the can around the cap, and how far the lead of the solder and the tin combined to make this poison was a matter of doubt. Taking one of these caps to a trained tinsmith, a flood of light was thrown upon the

case. He showed me that the cap was not fastened to the head of the can by a resin amalgum, as the sides were, but that the amalgum was made of muriate of zinc—that is, pieces of zinc were placed in muriatic acid and dissolved, and more zinc then placed in the acid till the acid would no longer attack the zinc, and this saturated solution of muriate of zinc was painted into the groove of the head of the can. The cap was then placed on and held with a clamp, and the soldering iron passed around. The iron being heated to a great heat, of course the solder held the acid in—it could not escape on the outside of the can, and if there happened too much acid applied to the groove, then as the tin expanded with the heat it would be forced into the can. That this muriate of zinc amalgum was painted on with a brush, that boys were employed for this purpose, and if they happened to get the brush too full, this acid would be forced into the can. The can was coke tin. The terne tin being easily recognized from coke tin—the coke tin being known by its bright color, while Terne tin is dull and shows the lead in its composition. He said this was a very favorite amalgum with roofers, on account of the quickness with which it could be applied, but that good architects and builders would not allow of its use because it rotted the tin. This gave the explanation of the case.

The well-known effect of chlorine as a bleaching instrument would explain the faded condition of the tomatoes, while if the poison had been from the verdigris, then the color would be green from the staining of the verdigris. The same color may be seen in the imported French peas, which are colored with it and which our health authorities still allow to be sold in the open market. The

poison was a muriate of zinc and tin, the acid around the cap having eaten off the tin from the inside of the head of the can. If the acid had not got in the can and attacked this part of the tin, there was no reason why this portion of the tin should not be as bright as the rest of the can. The inside of the can on the side where the resin amalgum was used was as bright as any other part, and the bottom of the can was also as bright around its edges as the rest. The contrast between these joints and that of the cap was so marked there could be no doubt of the poison. It was a double poison—muriate of zinc and muriate of tin. This, too, explained why it was that the eldest daughter had suffered the most. This poison had become dissolved in the liquid portion of the tomatoes. The oldest daughter had soaked her bread in the juice and eaten it, thereby getting the largest share of the poison. The mother, who was the next severest affected, had also soaked the bread in the juice, but, not liking it, had not taken much of it. While the second daughter took the catsup part, or soft part of the tomatoe, and was the next severest affected, while the boys and nephew took the solid part, and got off the easiest.

CHLORIDE OF ZINC.

Woodman and Tidy, p. 221, ed. 1887 :

“It is, moreover, a powerful corrosive poison. Several cases are recorded where it has been swallowed accidentally, and with fatal result. Applied externally, it is found to act as a powerful escharotic. The chloride of zinc differs in its action from all other zinc salts by its rapidly coagulating action on liquid albumen and on delicate tissues of the body. Its action on the living body is twofold : (1st) It is a caustic

and an irritant, producing pain, and instant vomiting; and, (2d) it exerts a specific action on the motor or organic system of nerves; for, after the poison has been taken, the pulse and breathing are accelerated, the voluntary muscles become paralyzed, the pupils dilate, coma supervenes, and death occurs without a struggle. The poison may be found in the tissues, urine and blood."

"The heart is usually found distended, and the blood black and uncoagulated."

A. W. Blyth, *Foods and Poisons*, ed. 1878, p. 452, says:

"Very serious illness has followed the ingestion of Burnett's fluid, in quantity equal to 12 grains of the chloride. Death has taken place from about 100 grs. of the chloride, and recovery after 200 grs."

The *New York Herald*, of April 18, 1883, and subsequently, had a series of canning articles, written by some one who thoroughly understood the business. And the danger of poisoning by the escape of this muriate of zinc flux into the can is specifically pointed out. He reports an interview with a veteran canner, who has sealed thousands of cans, who says that he knows that this muriate of zinc has got into the cans he has sealed; and also that this danger has been known in Maryland, and from the fact that *State of Maryland has a law prohibiting the use of this muriate of zinc flux*. That this acid will attack the tin, as well in a vacuum as out of it, is shown by the facts of the case. I took the care to examine a dozen cans where this muriatic acid amalgum was used, and in all of them there was more or less of the tin dissolved off. In the *Herald* article was the report of Prof. E. B. Stewart, Secretary of the Illinois Microscopical Society. He said:

"I take the liberty of calling your attention to a source of

danger, until now unsuspected by me, from the use of canned vegetables, an instance of which came to my notice by happening to observe in my kitchen, a few days since, a can which had contained lima beans. The appearance of the up-turned lid attracted my attention, and on examining the interior of the can more closely, I found that the coating of the tin had been almost entirely dissolved from the iron, only patches remaining in places, to show that it ever had been tinned. A portion of its contents was submitted to proper chemical tests, which revealed the presence of tin in large quantity. It is probably well known to your readers that tin is, when taken into the system, poisonous. It has an irritant, caustic and astringent action; and in extreme doses, convulsions, and sometime paralysis, occurs. Like most other minerals it may, when constantly taken in small doses, be retained till serious symptoms appear, and while the use of a single can of vegetables containing a considerable quantity would not be followed by fatal results, the constant use of food strongly impregnated with this metal would, in time, be likely to produce serious consequences. Manufacturers should not find it a difficult matter to secure non-poisonous material for making of cans. By simply leaving the thin plate of tin off the iron, a package is obtained which, for most vegetables, is unobjectionable; and in those cases where discoloration might follow the use of bare iron, a japanned iron might be substituted. The use of solder can also be done away with, by substituting a very hard cement like the ordinary can wax, which is perfectly insoluble in the acid or other proximate principles of fruits and vegetables. Is it not possible that the corrosion in this case was from the muriate of zinc amalgum, as in my case the tin was attacked?"

The position the French Government has taken with regard to the danger from the lead poisoning in the cans, can be best judged from the regulations established by the Director-General of Customs of France. I quote from the *Herald* :—
“The Consulting Commissioner of Hygiene, to whom the question has been submitted, is convinced that, as far as the public health is concerned, there are serious objections to permitting the sale of products which, from contact with solder, or with surfaces covered with an alloy containing lead, might become the cause of poisoning. The Commissioner has, consequently, reported that there is reason to forbid makers of cans for alimentary conserves to solder on the inside of such cans, or to employ, in the manufacture of their cans, tins of other than the best quality. The Commissioner of Hygiene has added that, if manufacturers insist on soldering on the inside of the cans, they ought to be obliged to use pure tin exclusively.”

The legal aspect of this question is a matter of interest. I quote from chapter XII. of Elwell's Medical Jurisprudence. “It is a well established principle of law that a vendor of provisions for domestic use is bound *to know* that they are sound and wholesome, at his peril, *Van Brachlin vs. Fonda*, 12 Johnson's Reports, 468. It is an equally elementary principle that in contracts for the sale of provisions the party, by implication, who sells them, undertakes to guarantee that they are sound and wholesome, 3 Blackstone, 165. Blackstone also says : Injuries affecting a man's health are, when by any unwholesome practices of another, a man sustains any apparent damage in his vigor or constitution, as by selling him bad provisions or wine ; by the exercise of a noisome trade or by the neglect or unskilful management of

a physician, surgeon or apothecary. These are wrongs or injuries unaccompanied by force, for which there is a remedy in damages by a special action on the case, 3 Chitty Black, 91. Second: The action will accrue not against the last vendor when the goods are sold in sealed packages, but against the original manufacturer. This is a point settled by the courts for many years. Notwithstanding, in the course of trade, the goods have passed through many hands and are finally bought and used by one who is injured thereby. The original maker is liable to the person so injured and not to the grocer who, relying on the correctness of the label, innocently sells the article for what it is not. If, however, that grocer knows that the article is dangerous or if that knowledge is possessed by any of the parties through whose hands it has passed, if he knows that the article is dangerous then he cannot evade the responsibility of his unlawful act. An extremely interesting case bearing on this point was taken to the court of last resort and is reported in chapter 12 of Ewell's Medical Jurisprudence.

The case is *Thomas and wife vs. Winchester*, 2d Selden's Reports, N. Y. Court of Appeals, 397. The facts proved in the case were briefly these: Mrs. Thomas being in ill health, her physician prescribed for her a dose of dandelion. Her husband purchased for her what was believed to be the medicine prescribed, at the store of Dr. Foord, a physician and druggist, in Cazenovia, Madison Co., where the plaintiff resides. A small quantity of the medicine thus purchased was administered to Mrs. Thomas, on whom it produced very alarming effects, such as extreme coldness of the surface and extremities, feebleness of circulation, spasms of the muscles, giddiness of the head, dilatation of the pupils of the eyes and derangement of the mind.

She recovered, however, after some time, from its effects, although for a short time her life was thought to be in great danger. The medicine administered was *belladonna* and not dandelion. The jar from which it was taken was labelled " $\frac{1}{2}$ lb. dandelion from A. Gilbert, 108 John street, N. Y., Jar, 8 oz."

It was sold for, and believed by Dr. Foord to be, the extract of dandelion, from Jas. S. Aspinwall, a druggist of New York. Aspinwall bought it of defendant believing it to be such. The defendant was engaged at 108 John street, in the manufacture and sale of certain vegetable extracts for medicinal purposes, and in the purchase and sale of others. The extracts manufactured by him were put up in jars for sale, and those that he purchased were put up by him in like manner. The jars containing extracts manufactured by him and those containing extracts purchased by him from others, were labelled alike. Both were labelled like the jars in question, as prepared by A. Gilbert. Gilbert was a person employed by the defendant at a salary, as an assistant, in his business. The jars were labelled in Gilbert's name, because he had previously been engaged in the same business on his own account, at 108 John street, and probably because Gilbert's name rendered the article more saleable. The extract contained in the jars sold to Aspinwall, and by him to Foord, was not manufactured by the defendant, but was purchased by him from another manufacturer or dealer.

The extract of dandelion and the extract of *belladonna* resembled each other in color, consistence, smell and taste, but may, on careful examination, be distinguished, the one from the other, by those who are well acquainted with the

articles. Gilbert's labels were paid for by Winchester and used in his business with his knowledge and consent.

The Court of Appeals sustained the principles laid down above, in the following words :

“The sale of the poisonous article was made to a dealer in drugs and not to a consumer. The injury, therefore, was not likely to fall on him or on his vendee, who was also a dealer, but much more likely to be visited on a remote purchaser, as actually happened. The delendant's negligence put human life in imminent danger ; can it be said that there was no duty on the part of the defendant to avoid the creation of that danger by the exercise of greater caution or that the exercise of that caution was a duty only to his immediate vendee, whose life was not endangered? The defendant's duty arose out of the nature of his business and the dangers to others incident to its mismanagement. Nothing but mischief like that which actually happened, could have been expected from sending the poison falsely labelled into the market, and the defendant is justly responsible for the probable consequences of his act.”

Not only can the canners be made to respond in damages for the continuance to use this virulent poison in their soldering, but they can be made to respond in exemplary damages—that is, the jury may not only award the actual damages they determine a party has suffered, but also such a sum as will make an example of these wrongdoers, so as to deter others *from this wilful tampering with human life*.

What are the facts of the case? The danger of this muriate of zinc flux is so well known that its use is prohibited by the laws of Maryland. These dangers have been so thoroughly exposed by the *Herald* more than a year ago. Their

trade journals have fully discussed the matter, so they cannot plead ignorance of this danger. Their representative men are here to-night, and these cases are brought to their notice. Safe measures can be adopted instead of dangerous ones. The resin that makes the outside seam tight will also make the seam on the cap equally safe.

When a man uses a dangerous means when he could have used a safe one, and human life is imperilled thereby, he cannot escape the consequences of his act. Those that still believe otherwise would profit by reading the cases of *Fleet and Semple v. Hollencamp*, reported in chapter XII. of *Elwell's Medical Jurisprudence*. The case was taken to the highest court in Kentucky, and exemplary damages sustained through every court, and by that of last resort. In this case *Hollencamp* had had a prescription of Peruvian bark and snakeroot put up at *Fleet & Semple's* drug store, and their clerk carelessly ground up the bark and snakeroot in a mill in which Spanish flies or cantharides had been ground before. The clerk neglecting to clean the mill, the Spanish fly became mixed with the plaintiff's prescription, and he, taking it, thinking it was the medicine ordered by his physician, received serious harm. The Court of Appeals says: "Whether exemplary damages should or should not be given does not depend on the form of action so much as upon the nature and extent of the injury done, and the manner in which it was inflicted, whether by negligence, wantonness, or without malice. In these cases, instead of *caveat emptor*, it should be *caveat vendor*. The excuse that it was an accidental or an innocent mistake will not avail him, and he will be liable, at the suit of the party injured, for damages *at the discretion of the jury*." In the same decision, in response to

the question argued by the attorney for the druggist, as to the druggists being insurers, the Court of Appeals said: "We see no good reason why a vendor of drugs should in his business be entitled to a relaxation of the rule which applies to vendors of provisions, which is that the vendor undertakes and insures that the article is wholesome. Sound public policy in relation to the preservation of health, and even of life, would seem to require that this rule should have a rigid and inflexible application to cases similar to the one under consideration."

A suggestion was made to me by a manufacturer, of a reason why this poisonous amalgum should not be allowed. It is well known that all labor organized has its trades unions. When a dispute arises between the union and the employers, if the union cannot carry their measures by fair means they use foul. Malicious mischief is the rule. In his own business glass factory there was a strike. Some of the union men refused to strike. He found that he could not walk across the floor without the glassware breaking to pieces. They had dropped something into the glass while the annealing was going on that rendered it so brittle as to be worthless. He mentioned in other trades how the same malicious mischief had been accomplished. Now, suppose a strike takes place and malicious mischief is ordered, how easy to drop a teaspoonful of this poisonous muriate of zinc into some of the cans to hurt the proprietors' business. Surely such a virulent poison should not be too handy. It should not be allowed by any State law or tolerated by the manufacturers themselves.

It has been asked what is the use of your trying to effect a change in this form of soldering the caps. The Canned

Goods organization is so powerful that it can override even State legislation; and they instance the bill at Albany this season to prevent canned goods over a year old being sold in this State. I believe that the canners themselves will make the change.

History repeats itself. A quarter of a century ago, all pickles sold in England were colored by verdigris. It was poisonous—sickness ensued from eating them. Prosecution after prosecution was instituted against the manufacturers for a violation of the law. By the aid of able lawyers they were enabled to escape. The public began to be demoralized, they were afraid to use the colored pickles, and the trade suffered.

Cross & Blackwell came to the front; they made an honest, uncolored pickle.

Every bottle of pickles sold by them bore the label, "These pickles do not have the fine green color usually seen on pickles, for that color is produced by verdigris, which is poisonous. These are honest pickles, put up in pure cider vinegar." They trusted the public and the public trusted them, and the enormous fortune they made showed how great was the reward to him who restored the public confidence in a necessary article of food. So with the wavering confidence of the public in canned goods, the trade will see to it themselves that confidence is restored or their business is gone. Doubt will kill the business. If a mother dreads when she is putting food before her children that she is giving them poison, then she will no more give them that food than she will give them so much poison.

To sum up—

1st. These were not cases of sickness from spoiled tomatoes.

2d. They were cases of corrosive poisoning from muriate of zinc and muriate of tin.

3d. This poisonous amalgum must be abandoned.

4th. Exemplary damages, "at the discretion of the jury," will be sustained by the courts for this reckless tampering with human life in using a dangerous means when a safe one could be used.

5th. The canners have only themselves to thank for the present panic in their business, for they have persisted in this dangerous plan, knowing it was dangerous.

6th. Every cap should be examined, and if two holes are found in it, send the can at once to the Health Board, with the contents and name of the grocer who sold it.

7th. Reject every article of canned food that does not show the line of rosin around the edge of the solder of the cap, the same as is seen on the seam at the side of the can.

8th. Reject every can that does not have the name of the manufacturer or firm upon it as well as the name of the company and the town where manufactured, "standards" have all this. When the wholesale dealer is ashamed to have his name on the goods, fight shy of them.

9th. Press up the bottom of the can ; if decomposition is commencing, the tin will rattle the same as the bottom of the oiler of your sewing machine does. If the goods are sound it will be solid, and there will be no rattle to the tin.

10th. Reject every can that shows any rust around the cap on the inside of the head of the can. If housewives are educated to these points, then muriate of zinc amalgum will become a thing of the past, and dealers in "swells" have to seek some other occupation.

